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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,302	03/10/2004	Yoshinobu Suehiro	PTGF-04009	9113

21254 7590 07/10/2006

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EXAMINER	
PATEL, ASHOK	
ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/796,302	SUEHIRO ET AL.	
	Examiner	Art Unit	
	Ashok Patel	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-12* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *050406*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claim 3 is objected to because of the following informalities: The term "different kinds of phosphor glass" reads grammatically incorrect. Appropriate correction is required.

2. Claims 4-6 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "the phosphor glass comprises particle-shaped phosphor glass" renders the claim vague since it remains unclear as to what it means even in light of specification. At page 7, line 23-24, the specification disclose the phosphor glass may be contained in the phosphor layer while being ground into particles or powder, meaning the phosphor layer (i.e. phosphor glass layer) contains phosphor glass **particles** dispersed in it, not the phosphor glass dispersed particles. The phosphor particles are very tiny (perhaps micro-sized) particles, whereas the phosphor glass itself is a larger sized physical item that has a definite shape (such as, planar or curved etc.). The phosphor glass does not have a particle-seized shape.

Therefore, the items "phosphor glass", "phosphor layer" and "phosphor particles" are different from each other.

In light of this, the term "phosphor glass comprises particle-shaped phosphor glass" is vague. The phosphor glass does not have a particle-seized shape.

It is the Examiner's opinion that the term "particle-shaped phosphor glass" of claim 3 (at two occurrences) should be changed to --particle containing phosphor glass—to overcome the vagueness.

For the purpose of action on merits, the Examiner interprets the "particle-shaped phosphor glass" as the "particles-containing phosphor glass" in the entire office action.

As to claims 9-12, the term "**a** fluorophosphates glass" renders the claims vague since it remains unclear as to whether the fluorophosphates glass of claims 9-12 is same or different from the fluorophosphates glass of parent claims 1 and 8.

Dependent claims 5-7 are necessarily rejected by way of their dependencies on rejected claim 4.

3. Claims 3 and 7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the

claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 3 recites the phosphor layer in it singular form. Base claim 1 also recites the phosphor layer in it singular form. However claim 3, later recites the same singular phosphor layer containing a plurality of layer**s**, which is contradictory.

Claim 7 recites the limitation "transparent material comprising synthetic resin". However, as per base claim 4 and base claim 1, the transparent material is comprised of the phosphor glass, which is a low-melting glass. Now since base claims recite the transparent material being comprised of the low-melting phosphor glass, it is not understood how the same transparent material of claim 7 is comprised of the synthetic resin. Low melting phosphor glass material and synthetic resin are two different materials.

The limitation of low-melting glass is supported by claim 1. However, the limitation of synthetic resin is not supported by any base claim.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and

> use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for the phosphor layer including the phosphor material of claim 6 which is made of **other than** the phosphor glass. The term "other than" as recited in claim 6, refers to any material, which is beyond the scope of the disclosed phosphor material of the phosphor glass.

6. Applicant's arguments with respect to amended version of claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 4, 6, 7, 8, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shinkai et al (USPN4540915).

As to claim 1, 7, 8, 10 and 12, Shinkai et al disclose applicant's claimed light emitting device (see title of the invention), including:

a light emitting element (not shown); and

a phosphor layer (not shown, however, disclosed at least in Summary of Invention at col. 1 etc.) that includes phosphor glass to generate fluorescence while being excited by light emitted from the light emitting element,

wherein the light emitting element emits ultraviolet light, and the phosphor glass generates visible fluorescence while being excited by the ultraviolet light, and

the phosphor glass comprises a low-melting (low-melting point) phosphor glass (see Background of Invention, Summary of the Invention at col. 1) doped with a fluorescence activation element.

Alternatively, providing the light-emitting element within the light-emitting device is known in the art and therefore would be obvious to one of ordinary skill in the art for emitting the light from the device. Further, it is also known in the art that the fluorescent light-emitting element emits ultraviolet light from it, and then converts into visible light upon passing from the phosphor layer or the phosphor glass.

Therefore, it would have been obvious to one of ordinary skill in the art to provide a light emitting device, such the one disclosed by Shinkai et al including a suitably available known light-emitting element and the phosphor glass as taught by the Shinkai et al for emitting a visible light from it.

As to claim 4, Shinkai et al disclose the phosphor glass containing glass particles dispersed in it (see Summary of Invention). The phosphor glass further includes glass material, which is inherently transparent in nature.

As to claim 6, Shinkai et al disclose the phosphor layer including phosphor material other than phosphor glass, the phosphor material being dispersed in the transparent material (see col. 6, lines 35-68).

10. Claims 1, 2, 4, 5, 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamazaki et al (USPN 5755998, of record).

As to claims 1 and 7-12, Yamazaki et al disclose applicant's claimed light emitting device (See Field of Invention, and Description of the Prior Art, col. 1) including:

a light emitting element (not shown); and

a phosphor layer (not shown) including fluorophosphate phosphor glass (see Title of Invention) to generate fluorescence while being excited by light emitted from the light emitting element,

wherein the light emitting element emits ultraviolet light, and the phosphor glass generates visible fluorescence while being excited by the ultraviolet light, and

the phosphor glass comprises a low-melting (low-melting point) phosphor glass (col. 4, lines 11-16) doped with a fluorescence activation element.

Alternatively, as mentioned earlier in this office action, providing the light-emitting element within the light-emitting device is known in the art and therefore would be obvious to one of ordinary skill in the art for emitting the light from the device. Further, it is also known in the art that the fluorescent light-

emitting element emits ultraviolet light from it, and then converts into visible light upon passing from the phosphor layer or the phosphor glass.

Therefore, it would have been obvious to one of ordinary skill in the art to provide a light emitting device, such the one disclosed by Shinkai et al including a suitably available known light-emitting element and the phosphor glass as taught by the Shinkai et al for emitting a visible light from it.

As to claim 2, Yamazaki et al disclose the phosphor glass including Tb^{+3}, Eu^{+2} (or Eu^{+3}) (see summary of Invention, col. 2).

As to claim 4, Yamazaki et al disclose the phosphor glass containing glass particles dispersed in it. The phosphor glass further includes glass material, which is inherently transparent in nature.

As to claim 5, Yamazaki et al disclose the phosphor glass including different kinds of particles-containing phosphor glasses (blue or white of violet, see abstract, col. 11. last paragraph).

11. Claims 1, 2, 4, 5 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuka (USPN 5635109, of record).

As to claims 1 and 7-12, Otsuka discloses applicant's claimed light emitting device (See Description of the Prior Art, col. 1) including:

a light emitting element (not shown); and

a phosphor layer (not shown) including phosphor glass (see Title of Invention) to generate fluorescence while being excited by light emitted from the light emitting element,

wherein the light emitting element emits ultraviolet light, and the phosphor glass generates visible fluorescence while being excited by the ultraviolet light, and

the phosphor glass comprises a low-melting (low-melting point) phosphor glass (paragraph bridging columns 2 and 3) doped with a fluorescence activation element.

Alternatively, as mentioned earlier in this office action, providing the light-emitting element within the light-emitting device is known in the art and therefore would be obvious to one of ordinary skill in the art for emitting the light from the device. Further, it is also known in the art that the fluorescent light-emitting element emits ultraviolet light from it, and then converts into visible light upon passing from the phosphor layer or the phosphor glass.

Therefore, it would have been obvious to one of ordinary skill in the art to provide a light emitting device, such the one

disclosed by Shinkai et al including a suitably available known light-emitting element and the phosphor glass as taught by the Shinkai et al for emitting a visible light from it.

As to claim 2, Otsuka disclose the phosphor glass including Tb^{+3}, Eu^{+2} (or Eu^{+3}) (see summary of Invention).

As to claim 4, Otsuka discloses the phosphor glass containing glass particles dispersed in it. The phosphor glass further includes glass material, which is inherently transparent in nature.

As to claim 5, Otsuka discloses the phosphor glass including different kinds of particles-containing phosphor glasses (blue or green, see col. 5, line 10-13; col. 7, last paragraph).

12. Claim 3 allowable over prior art of the record since prior art of the record does not disclose applicant's light emitting device of base 1 further including a plurality of layers including different kinds of phosphor glass.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ashok Patel
Primary Examiner
Art Unit 2879